FAUQUIER COUNTY
TECHNICAL REVIEW

PROPOSED 120-FOOT MONOPOLE
(ATC # 1007-62)

Submitted By:

ATLANTIC TECHNOLOGY CONSULTANTS, INC.[1]
A Member of The Atlantic Group of Companies

April 21, 2003

BACKGROUND:

AT&T Wireless (AT&T) is a licensed provider of cellular service in Virginia. AT&T proposes to construct a 120-foot monopole tower to support antennas used for wireless service on the property of William Martin located at 4626 Dumfries Rd in Catlett. The objective is to close out dead spots in the surrounding area of the Catlett and Auburn area of Dumfries Rd.

SITING AND DESIGN:

The resubmitted site plan indicates that the site has been moved to accommodate an area of flood plain concern. AT&T proposes the use of three flush mounted antennas to minimize visual impact in the surrounding area. AT&T proposes to install two 3' X4' cabinets to house their radio equipment and have provided space for expansion of one additional carrier on the site, also utilizing flush mounting of antennas to the structure.. No other equipment is proposed on the structure.

ENVIRONMENTAL & HISTORIC IMPACTS:

Environmental Review
The National Environmental Policy Act of 1969 (NEPA), delineated in Title 47 of the Code of Federal Regulations, Part 1, Subpart I, sections 1.1301-1.1319, requires federal agencies to incorporate environmental considerations into their decision-making process. As a licensing agency, the Federal Communication Commission (FCC) requires all licensees to consider the potential environmental effects from its construction of antenna support structures and disclose those effects in an *Environmental Assessment* that must be filed with the FCC for review. In the absence of a NEPA report, the potential impact on environmental resources is not known.

1 This report was prepared at the request of the County to provide an independent, objective, and unbiased review of the subject application. The following staff contributed to discovery of the findings and development of the recommendations presented herein. They are: George N. Condyles, IV, Principal, who provided oversight and final approval authority; James M. Whitaker, PE, Vice President of Engineering, who performed technical review of the physical aspects of the proposal to include radio frequency, electrical/grounding, structural, and site plan; and William J. DeCoste, Manager of Field Operations who investigated land use impacts, conformance with the ordinance, and environmental/historical impacts. The recommendations presented herein were developed based upon accepted engineering standards and the regulatory requirements of the governing agencies.

Historic Review

Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires that the State Historic Preservation Office[2] (SHPO) and the President's Advisory Council on Historic Preservation be given a reasonable opportunity to comment on all federal undertakings with the potential to affect historic properties. Prior to construction, the licensee is required to submit to the SHPO a detail description of the project, a listing of historic resources and a discussion of any measures being undertaken to mitigate impacts on historic resources, as determined by the applicant. Upon receipt, the SHPO has (30) days to review and respond. In the absence of SHPO review, the potential impacts on historic resources are unknown.

Findings

The proposed facilities are not located within any Federal lands or on other properties the County has deemed through its ordinance to be prohibited. The applicant has provided site plans that detail the use of stone outlet drainage and wet pond to aid in the maintenance of the near by flood plain as described in the provided site plans.

AVIATION CONSIDERATIONS:

The Federal Aviation Administration (FAA) requires that an air hazard study be performed for all new structures, unless categorically excluded under FAA rules and regulations. A preliminary aviation study (enclosed) issued by the FAA dated April 21, 2003 indicates a finding of "No Hazard to Air Navigation."

CO-LOCATION OPORTUNITIES

A site visit confirms the findings of the applicant, there are no suitable structures in the immediate area that would allow the applicant to meet their coverage needs. The existing Vint Hill tower was considered in helping with the applicant's coverage objective, however it was found that AT&T is already collocated on a water tank less than one mile form the Vint Hill site. An additional array at Vint Hill would appear to cause interference with their existing Water tank site. In addition, the Vint Hill Site is to far away to provide adequate coverage for this area.

Crown Castle owns a 185' tower located off of Rt. 28 which has available space for co-location that, as described below provide coverage for this area

PROPAGATION ANALYSIS:

The coverage objective for this site is to provide service in the Auburn - SR 605/Dumfries Rd corridors and the surrounding area. The proposed site is designed as a "fill in and extension" site for the approved 110' Elmores Lane to the north-west and out to Rt. 28.

Exhibit 1 shows AT&T's current coverage with the approved Elmore site. Exhibit 2 depicts AT&T coverage for this area when co-located on the above mentioned Crown tower at 145'. Exhibit 3 details coverage with the proposed Martin Site at 120' and Exhibit 4 shows the proposed Martin site at 80'.

RECOMMENDATIONS:

The applicant wishes to fill weak signals in the Rt. 605 area. There are four recommended options:

Option 1

Allow the applicant to build the site as requested.

Option 2

Allow the applicant to construct an 80' wood monopole which will reduce the visual impact that is presented in the package submitted under profile views to the surrounding resident(s).
As shown in the propagation models, the decrease in overall height of the structure with the co-location on the Crown tower would not reduce the overall coverage in the area.

Option 3

Allow the applicant to construct an 80' silo type stealth structure on the hill top/cleared pasture area of the property well away from the flood plain as outlined in the submitted site plans, thereby reducing all visual impact to the surrounding residential area(s). The applicant would be able to further reduce any gaps in coverage by utilizing the mentioned Crown tower for co-location.

Option 4

Deny the application for the structure and request the applicant to co-locate on the Crown site as mentioned and avoid the construction of an unneeded additional site in the area.

ATC recommends Option 2 or Option 3.